

15. Exhibit 15: BLAST analysis SEQ ID NO.: 2 and of the MOMP sequences shown in Figure 1 of Murdin
16. Exhibit 16: BLAST analysis of the PMPE protein encoded by the insert of PTA-2462 to the sequence of each of the sequences shown in Figure 1 of Murdin
17. Exhibit 17: a copy of PCT publication WO 96/40893

(3) a Second Supplemental Information Disclosure Statement with a PTO 1449 listing References BO-BW and a copy of References BO-BW .

IN THE CLAIMS:

Please cancel Claims 1-4, 6-7, 15-24, 31-32, 41, 57-59 and 73-78 without prejudice and replace with new Claims 79-106 as follows:

79. (New) A vaccine comprising an isolated putative membrane protein E (PMPE) polypeptide of a *Chlamydia spp.*, having a molecular weight between 90 and 115 kDa as determined by SDS polyacrylamide gel electrophoresis which protein specifically binds an antibody that specifically binds to a protein comprising the amino acid sequence of SEQ ID No.: 2 and a pharmaceutically acceptable carrier or diluent.

80. (New) The vaccine of Claim 79, wherein the *Chlamydia spp.* is *Chlamydia trachomatis*, *Chlamydia pneumonia*, *Chlamydia psittaci* or *Chlamydia pecorum*.

81. (New) The vaccine of claim 80, wherein the *Chlamydia spp.* is *C. trachomatis*.

82. (New) The vaccine of claim 79, wherein the PMPE polypeptide comprises an amino acid sequence of SEQ ID NO.:2, a sequence at least 70% identical thereto when % identity is determined using XBLAST program, score=50, wordlength=3, or

an at least 8 amino acid fragment thereof which fragment specifically binds an antibody that specifically binds to a protein comprising the amino acid sequence of SEQ ID No.: 2.

83. (New) The vaccine of claim 79 further comprising one or more adjuvants or immunostimulatory compounds.

84. (New) The vaccine of claim 83, wherein the adjuvants or immunostimulatory compounds are one or more of alum, MLT, QS21, MF59, CpG DNA, PML, calcium phosphate and PLG.

85. (New) The vaccine of claim 83 comprising one adjuvant or immunostimulatory compound.

86. (New) The vaccine of claim 83, comprising two different adjuvants or immunostimulatory compounds.

87. (New) The vaccine of claim 83, additionally comprising one or more immunogens selected from the group consisting of a lipid, lipoprotein, phospholipid, lipooligosaccharide, protein, attenuated organism and inactivated whole cell.

88. (New) The vaccine of claim 87, wherein the one or more immunogens are a DPT vaccine, a HMWP of *C. trachomatis*, a MOMP of *C. trachomatis*, or an entire organism, or subunit therefrom, of *Chlamydia*, *Neisseria gonorrhea*, HIV, *Haemophilus influenzae*, *Moraxella catarrhalis*, *Human papilloma virus*, *Herpes simplex virus*,

Haemophilus ducreyi, *Treponema pallidum*, *Candida albicans* or *Streptococcus pneumoniae*.

89. (New) The vaccine of Claim 87, wherein the additional immunogen is another protein of *Chlamydia*.

90. (New) The vaccine of Claim 87, wherein the additional immunogen is HMW (High Molecular Weight) protein of *Chlamydia trachomatis*.

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91. (New) A vaccine comprising an isolated recombinant PMPE polypeptide, said polypeptide produced by a method comprising culturing a host cell containing a nucleic acid molecule comprising the nucleotide sequence of SEQ ID No.:1 fused to a nucleotide sequence encoding a histidine affinity ((H)₆) domain under conditions suitable for expression of said PMPE polypeptide and recovering said recombinant PMPE polypeptide, and a pharmaceutically acceptable carrier or diluent.

92. (New) A vaccine comprising an isolated recombinant PMPE polypeptide, said polypeptide produced by a method comprising culturing a host cell containing plasmid M15 pREP (pQE-pmpE-Ct) #37 obtainable from *E.coli* having ATCC accession No. PTA-2462 under conditions suitable for expression of said PMPE polypeptide and recovering said recombinant PMPE polypeptide, and a pharmaceutically acceptable carrier or diluent.

93. (New) A vaccine comprising an isolated PMPE polypeptide produced by a method comprising culturing a host cell containing a nucleic acid molecule comprising a

nucleotide sequence which encodes a PMPE comprising an amino acid sequence of SEQ ID No.: 2 under conditions suitable for the expression of a PMPE polypeptide and recovering said PMPE polypeptide.

94. (New) A vaccine comprising an isolated recombinant PMPE polypeptide comprising a polypeptide encoded by a nucleic acid molecule comprising the nucleotide sequence of SEQ ID No.: 1 fused to a nucleic acid molecule encoding histidine affinity ((H)₆) domain.

95. (New) A vaccine comprising an isolated recombinant PMPE polypeptide comprising an amino sequence of SEQ ID No.: 2 fused to an amino acid sequence comprising a histidine affinity ((H)₆) domain.

96. (New) An isolated peptide fragment of the PMPE polypeptide, which fragment is at least 8 amino acids in length and specifically binds an antibody that specifically binds to a protein comprising the amino acid sequence of SEQ ID No.: 2.

97. (New) The peptide fragment of claim 96 wherein said peptide fragment comprises the amino acid sequence of one of SEQ ID NOS.:5-22.

98. (New) A vaccine comprising the polypeptide fragment of claim 96 and a pharmaceutically acceptable carrier or diluent.

99. (New) The vaccine of claim 98, further comprising one or more adjuvants or immunostimulatory compounds.

100. (New) The vaccine of claim 98, wherein the one or more adjuvants or immunostimulatory compounds are selected from the group consisting of alum, MLT, QS21, MF59, CpG DNA, PML, calcium phosphate and PLG.

101. (New) The vaccine of claim 98, comprising one adjuvant or immunostimulatory compound.

B ant 102. (New) The vaccine of claim 98, comprising two different adjuvants or immunostimulatory compounds.

103. (New) The vaccine of Claim 98, additionally comprising one or more immunogens selected from the group consisting of a lipid, lipoprotein, phospholipid, lipooligosaccharide, protein, attenuated organism and inactivated whole cell.

104. (New) The vaccine of Claim 103, wherein the one or more immunogens are a DPT vaccine, a HMWP of *C. trachomatis*, a MOMP of *C. trachomatis*, or an entire organism, or subunit therefrom, of *Chlamydia*, *Neisseria gonorrhea*, HIV, *Haemophilus influenzae*, *Moraxella catarrhalis*, *Human papilloma virus*, *Herpes simplex virus*, *Haemophilus ducreyi*, *Treponema pallidum*, *Candida albicans* or *Streptococcus pneumoniae*.